

**WHAT IS CLAIMED IS:**

- 1           1.       A method of enhancing text-like edges in an image of pixels,  
2       comprising the steps of:  
3               segmenting pixels in a block of image pixels into first and second pixel  
4       classes; and  
5               edge enhancing the pixel block in response to a determination that the  
6       pixel block likely contains at least one text-like edge based on a measure of  
7       distance separating intensity values respectively representing intensity  
8       distributions of the first and second classes and based on measures of peakedness  
9       of intensity histograms computed for both the first and second pixel classes.
- 1           2.       The method of claim 1, wherein segmenting pixels comprising  
2       classifying pixels in the block into light and dark pixel classes based on intensities  
3       of the pixels in the blocks.
- 1           3.       The method of claim 2, wherein pixels are classified based on  
2       luminance values of the pixels.
- 1           4.       The method of claim 1, wherein the distance measure corresponds  
2       to a measure of distance between first and second mean intensity values  
3       computed for the first and second pixel classes, respectively.
- 1           5.       The method of claim 4, wherein the first and second mean intensity  
2       values correspond to centroids of the first and second pixel classes, respectively.
- 1           6.       The method of claim 4, wherein the determination that the pixel  
2       block likely contains at least one text-like edge is based on a comparison between  
3       the measure of distance between the first and second mean intensity values and a  
4       threshold.
- 1           7.       The method of claim 6, wherein the step of edge enhancing the  
2       pixel block is omitted in response to a determination that the measure of distance  
3       between the first and second mean intensity values is less than the threshold.

1           8.     The method of claim 1, wherein the determination that the pixel  
2 block likely contains at least one text-like edge is based on comparisons between  
3 the peakedness measures and respective thresholds.

1           9.     The method of claim 8, wherein the peakedness measures  
2 correspond to the kurtosis of intensity histograms computed for both the first and  
3 second pixel classes.

1           10.    The method of claim 8, wherein the step of edge enhancing the  
2 pixel block is omitted in response to a determination that the peakedness  
3 measures of one or both of the first and second pixel classes are below respective  
4 thresholds.

1           11.    The method of claim 1, further comprising applying a noise filter to  
2 the image before pixels are segmented into the first and second pixel classes.

1           12.    The method of claim 11, wherein the noise filter applied to the  
2 image is an impulse noise filter.

1           13.    The method of claim 11, further comprising applying a Gaussian  
2 smoothing filter to the image before pixels are segmented into the first and second  
3 pixel classes.

1           14.    The method of claim 1, wherein the step of edge enhancing  
2 comprises the step of shifting intensity values of intermediate pixels having  
3 intensity values between first and second median intensity values computed for  
4 the first and second pixel classes, respectively.

1           15.    The method of claim 14, wherein the intensity value of any given  
2 intermediate pixel is shifted toward the median intensity value of the pixel class  
3 into which the given intermediate pixel was segmented.

1           16.    The method of claim 14, wherein intermediate pixel intensity values  
2 are shifted without changing the first and second median intensity values for the  
3 first and second pixel classes.

1           17.    The method of claim 16, wherein the intensity value of any given  
2 intermediate pixel is shifted by reducing its distance from the median intensity  
3 value of the pixel class into which the given intermediate pixel was segmented by  
4 a fixed ratio.

1           18.    The method of claim 14, wherein the intensity values of non-  
2 intermediate pixels in the block are unchanged by the intensity-value-shifting  
3 step.

1           19.    The method of claim 1, further comprising compressing the image  
2 after the edge enhancing step has been applied to the image.

1           20.    The method of claim 19, wherein the image is compressed in  
2 accordance with a mixed raster content image compression format.

1           21.    A system of enhancing text-like edges in an image of pixels,  
2 comprising an image enhancement engine operable to:  
3           segment pixels in a block of image pixels into first and second pixel  
4 classes; and  
5           edge enhance the pixel block in response to a determination that the pixel  
6 block likely contains at least one text-like edge based on a measure of distance  
7 separating intensity values respectively representing intensity distributions of the  
8 first and second classes and based on measures of peakedness of intensity  
9 histograms computed for both the first and second pixel classes.

1           22.    The system of claim 21, wherein the image enhancement engine is  
2 operable to segment pixels by classifying pixels in the block into light and dark  
3 pixel classes based on intensities of the pixels in the blocks.

1           23.    The system of claim 21, wherein the distance measure corresponds  
2 to a measure of distance between first and second median intensity values  
3 computed for the first and second pixel classes, respectively.

1           24.    The system of claim 21, wherein the determination that the pixel  
2 block likely contains at least one text-like edge is based on comparisons between  
3 the peakedness measures and respective thresholds.

1           25.    The system of claim 21, wherein the image enhancement engine is  
2   operable to apply a noise filter to the image before pixels are segmented into the  
3   first and second pixel classes.

1           26.    The system of claim 21, wherein the image enhancement engine is  
2   operable to edge enhance the pixel block by shifting intensity values of  
3   intermediate pixels having intensity values between first and second median  
4   intensity values computed for the first and second pixel classes, respectively.